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AUTHOR Beischer, W. A.; Hixon, L. B.
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ABSTRACT

How paraprofessionals relate to innovation within the high school was the point of investigation in a study completed in 1973. Of the 324 New York State secondary principals contacted, 243 (75 percent) supplied information and opinion in response to questionnaires. High school principals believe that innovation is positively related to the presence of paraprofessionals. To develop new programs, paraprofessionals are needed, although the need is more pronounced in some programs than in others. In schools where principals support the need for paraprofessionals in innovation, greater numbers of new programs exist. A principal's positive attitude for the need of paraprofessionals in new programs parallel an increase in the number of paraprofessionals. A positive association exists between the number of paraprofessionals employed in a school and the number of new programs in use. (Author/HLP)

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Paraprofessional Impact on School Innovation

W.A. Beischer and L.B. Hixon

Innovation

Technological advances, new and developing educational concepts and heavy social pressures are forcing the modern school to experiment with changes in structure, operation and instruction. New ways of teaching and handling youngsters are gaining in popularity and acceptance although change is not easy to implement and is certainly not automatic even when opinion is positive that the new should be substituted for the old. Factors such as expertise and availability of teaching personnel, pupil characteristics and readiness, plant use and restrictions, public understanding and support, implementation, and timing must be carefully considered. Any one of these factors, omitted in innovative planning, can easily "upset the apple cart."

Teachers and Paraprofessionals

Instructional innovation is without doubt impossible without teacher involvement, for instruction is the teacher's professional responsibility. Today, however, teachers no longer work alone. Paraprofessionals in increasing numbers are appearing as instructional helpers and adjuncts. Their work is designed to aid and abet the efforts of teachers. It is often extended into the professional classroom aspects of planning, evaluating and teaching.

In a recent New York State study it was shown that paraprofessionals were permitted in varying degrees to participate in all identified instructional

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activities.[1] In a similar study completed in Oregon, paraprofessionals were found to actually exceed teachers in amounts of time devoted to professional teaching concerns.[2]

The Impact Study

How paraprofessionals relate to innovation within the high school was the point of investigation in a study completed in 1973.[3] Four basic questions were explored.

1. How does the high school principal conceive the need for paraprofessionals in specific innovative programs and in overall innovation?
2. If a principal supports the need for paraprofessionals in innovative programs, does this support positively relate to the number of new programs in the school?
3. If a principal is convinced of the need for paraprofessionals when new programs are in use is his viewpoint in agreement with increased numbers of paraprofessionals in his school?

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1. L.B. Hixon. Role and Status of Teacher Aides in Selected New York State School Districts (SEARCH, Agriculture, Education 1, Cornell University Agricultural Experiment Station, New York State College of Agriculture, Cornell University, Ithaca, New York, May, 1971).

2. Eaton H. Conant. A Cost-Effectiveness of Employment of Non Professional Teaching Aides in Public Schools (Project No. OE8-0481, Grant No. OEG-0-8-080481-4530(085)). Bureau of Research, Office of Education, United States Department of Health, Education and Welfare, March, 1971).

3. W.A. Beischer. An Exploratory Study of the Impact of Paraprofessionals as Perceived by the Principals of Selected Secondary Schools. Unpublished Thesis. Cornell University, Ithaca, New York, 1973.

4. Does the number of paraprofessionals in a school have relationship to the number of innovative programs?

High school principals, because of their leadership and overview roles, were selected to evaluate their schools' organization and operation. Since principals constitute probably the chief driving force for change, in fact or under consideration, their experience and opinions are crucial to any study of paraprofessional innovative impact.

High schools included in the study had a ratio of at least one instructional paraprofessional to every two hundred pupils.[4] Of the 324 secondary principals contacted, 243 (75.0 percent) supplied information and opinion in response to questionnaires. Represented was a broad spectrum of schools within New York State, ranging from 500 pupils to over 2,500. About half are located in upstate counties and the remainder in the metropolitan areas near New York City. A total of 1928 instructional paraprofessionals were included.

Sixteen programs were characterized by the investigators as innovations. Any departure from traditional emphasis was considered as an innovation for a particular school, wherein direct, if not direct, relationships existed with learning and instruction.

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4. These data were obtained from the Bureau of Educational Data System (B.E.D.S.), Office of Long Range Planning, The New York State Education Department, Albany, New York.

New Programs in Use and Paraprofessional Need

High school principals were requested to indicate each of the new programs in operation in their schools and need for paraprofessional support. Table I indicates these data.

TABLE I. New Programs in Use and Need of Paraprofessionals

New Programs	In Use		Need for Paraprofessionals		
	# of Schools	% of Total	Needed	Not Needed	No Response
Independent Study	169	69.5%	52.6%*	45.0%*	2.4%*
Resource Centers	164	67.5	79.9	18.3	1.8
Team Teaching	146	60.1	56.8	42.5	0.7
Small Group Instruction	142	58.4	55.6	43.7	0.7
Large Group Instruction	138	56.8	51.5	47.8	0.7
"Mini" Courses	136	56.0	38.2	59,6	2.2
Flexible Scheduling	94	38.7	45.7	53.2	1.1
Provision for Continuous Progress	90	37.0	58.9	38.9	2.2
Learning "Packs"	88	36.2	61.4	36.4	2.2
Student Lounge	87	35.8	58.6	41.4	0.0
Open Labs	73	30.0	57.5	38.4	4.1
Flexible Facilities	68	28.0	61.8	35.3	2.9
Modular Scheduling	55	22.6	41.0	59.0	0.0
Differentiated Staffing	43	17.7	60.5	39.5	0.0
"Open" Campus	36	14.8	60.0	40.0	0.0
Smoking Area	28	11.5	50.0	50.0	0.0

*Note: Percentages refer only to replies based on programs in actual use. They do not refer to the total sample, n = 243.

Independent study programs, resource centers, team teaching, small group instruction, large group instruction and "mini" courses were in use in these schools, ranging from percentages of 56.0 to 69.5. On the other hand, the range of percentage use for flexible facilities, modular scheduling,

differentiated staffing, "open" campus, and smoking area was from 11.5 to 28.0.

Where programs were in operation the principals identified need for paraprofessionals as greatest in resource centers (79.9%), flexible facilities (61.8%), learning packs (61.4%), differentiated staffing (60.5%) and "open" campus (60.0%). While expressed need for paraprofessional involvement was strongest in resource centers (79.9%), this innovation was second in terms of actual use (67.5%). In contrast, while 60.5 percent of the principals felt that paraprofessionals should be involved in differentiated staffing, only 17.7 percent of the schools used this program. Surprising to the investigators was the finding that although there was a 60.1 percent use factor, only 56.8 percent of the principals of schools using team teaching felt that paraprofessionals were needed.

The members of new programs in the 243 schools is shown in Table II. For the purpose of providing cross tabulation cells, these numbers are combined into three categories of low (0 - 4), medium (5 - 7) and high (8 - 16). These three cells are comparable in total frequencies and percentages.

TABLE II. New Programs in Use, Totals by Schools

Number of Programs In Use		Number of Schools			Percentage	
0		14			5.8%	
1		11			4.5	
2	Low	12		Low	4.9	
3		22			9.0	
4		22	81		9.0	33.2%
5		26			10.7	
6	Medium	28		Medium	11.4	
7		23	77		9.5	31.7%
8		19			7.8	
9		18			7.4	
10		14			5.8	
11		6			2.5	
12	High	6		High	2.5	
13		7			2.9	
14		6			2.5	
15		2			0.8	
16		7	85		2.9	35.1%
	TOTAL	243			100%	

The ratio of teachers to paraprofessionals may have a bearing on usefulness that paraprofessionals have in the establishment and continuance of new programs. This ratio varies considerably among the schools in

this study. In order to account for these ratio differences and also to make allowance for part-time versus full-time employment, five different teacher/paraprofessional ratios were considered. The factor of full-time equivalent (F.T.E.) was established in which every two part-time teachers were judged as equal to one full-time teacher, and every two part-time paraprofessionals as equal to one full-time paraprofessional. Table III indicates the relationships of the five teacher/paraprofessional ratios to the three groups of new programs as revealed in Table II.

TABLE III. The Relationship Between Teacher/Paraprofessional Ratios and the Number of New Programs

Ratio of F.T.E. Teachers to F.T.E. Paraprofessionals	0–4	5–7	8–16	Row Totals
(1–7)/1	9 23.7% 11.1%	5 13.2% 6.5%	24 63.2% 28.2%	38 15.6%
(8–14)/1	22 28.9% 27.2%	24 31.6% 31.2%	30 39.5% 35.3%	76 31.3%
(15–21)/1	19 35.8% 23.5%	20 37.7% 26.0%	14 26.4% 16.5%	53 21.8%
(22–28)/1	12 33.3% 14.8%	12 33.3% 15.6%	12 33.3% 14.1%	36 14.8%
(over 28)/1	19 47.5% 23.5%	16 40.0% 20.8%	5 12.5% 5.9%	40 16.5%
Column Totals	81 33.3%	77 31.7%	85 35.0%	243 100.0%

Key:

Within Each Cell --
No. of Schools
Row
Column %

Gamma and chi-square values were computed to test the degree of relationship between these two variables. The gamma coefficient of -0.293 indicates that the increasing F.T.E. ratio is associated with decrease in paraprofessional utilization. The chi-square value, 25.624 (df.8) significant at the .01 level, points in the same direction. In other words those schools which have the greatest number of paraprofessionals, as determined through ratios of teachers to paraprofessionals, also report the largest number of new programs.

In order to determine the relative importance of paraprofessionals to new programs as generally perceived by principals, a new variable IXNPP was created. Generated from data in the questionnaire it is, in part, reflected in Table I. To construct such a variable it was necessary to give more weight to responses which indicated that paraprofessionals were "needed" than "not needed." As a result an arbitrary value of two points was assigned to each of the former items and one point to each of the latter. By summing these values over all of the programs "in use" in each school, it was possible to determine a total for each respondent. These totals then formed an index with the highest values referring to those respondents who felt paraprofessionals were most necessary and the lowest values referring to the principals who perceived them as least necessary. The index obtained from this process extended from 0 to 30.

The index was normed by dividing each total by the number of program This new variable, IXIVPP, represents the relative importance each principal attached to the use of paraprofessionals for new programs. The index

varies from a value of 0.00 to 2.00 and is shown in Table IV.

TABLE IV. IXNPP. A Normed Index Showing the Relative Importance Principals Attach to the Utilization of Paraprofessionals for New Programs and Activities

IXNPP	Number of Principals	INXPP	Number of Principals	INXPP	Number of Principals
0.0	17	1.33	6	1.67	7
0.18	1	1.36	1	1.69	1
0.67	1	1.38	1	1.70	2
1.00	48	1.40	1	1.71	6
1.10	1	1.42	1	1.73	2
1.13	1	1.43	2	1.75	8
1.14	2	1.44	2	1.80	2
1.17	3	1.46	1	1.83	4
1.19	1	1.50	17	1.85	3
1.20	2	1.56	5	1.86	2
1.21	1	1.57	3	1.88	3
1.22	1	1.58	1	1.89	5
1.25	8	1.60	5	1.90	2
1.27	1	1.63	2	1.92	1
1.30	2	1.64	2	2.00	55

The variable was dichotomized into those values above and below the median for the IXNPP values, 1.53. Several results are of interest. When IXNPP is cross tabulated with the number of new programs, gamma is moderately strong (0.333) and the chi-square value of 11.749 (df.2) is significant at the .01 level. There is also a significant relationship between IXNPP and the ratio of F.T.E. paraprofessionals to the F.T.E. teachers (gamma = -0.313 and chi-square = 14.882 df.4). Apparently, the attitude of the principal toward the need for utilizing paraprofessionals is positively related to the number of new programs within their schools, as well as to the number of employed paraprofessionals.

Summary

Answers to the questions posed in the study follow:

Question 1.

How does the high school principal conceive the need for paraprofessionals in specific innovative programs and in overall innovation?

Answer. High school principals believe that innovation is positively related to the presence of paraprofessionals. To develop new programs, paraprofessionals are needed, although the need is more pronounced in some programs than in others.

Question 2.

If a principal supports the need for paraprofessionals in innovative programs, does this support positively relate to the number of new programs in the school?

Answer. In schools where principals support the need for paraprofessionals in innovation, greater numbers of new programs exist. Statistical evidence indicates positive relationship.

Question 3.

If a principal is convinced of the need for paraprofessionals when new programs are in use, is his viewpoint in agreement with increased numbers of paraprofessionals in his school?

Answer. A principal's positive attitude for the need of paraprofessionals in new programs parallels an increase in the number of paraprofessionals.

Question 4.

Does the number of paraprofessionals in a school have relationship to the number of innovative programs?

Answer. A positive association exists between the number of paraprofessionals employed in a school and the number of new programs in use.

Whether the increased numbers of paraprofessionals relieves teachers of certain duties and details, thus providing time and energy for needed innovative exercises, or whether additional paraprofessionals are required as integral parts of new programs, are questions not answered in this study. It is presumed that each alternative is partly true and must be considered in terms of the uniqueness of each new program.

Implications and Discussion

1. It has been determined in this study that the presence of paraprofessionals in school instructional services relates positively to incidence of innovation. Bearing on this finding is the attitude of building principals. Those administrators who have greater numbers of paraprofessionals in their schools appear to be more convinced of this relationship than their colleagues in schools where smaller numbers exist. As an explanation it is suggested that experience with paraprofessionals lends support, that lack of experience tends to prolong underestimation of value.

It is true that paraprofessional inclusion is still a limited and untried experiment in many schools. A sizeable number of principals and teachers

object to their presence as forms of professional incursion and breakdown. Additional factors such as financial limitations, disbelief in paraprofessional capabilities and utilization, status-quo preservation, central office restrictions and community opposition restrict employment. Yet where use has become pronounced, principals are convinced of the need for paraprofessionals as part of the innovative process, and this viewpoint is supported by the fact that when there are more paraprofessionals, there are also more new programs.

2. Explanations for paraprofessional impact on innovation are conjectured as follows: (1) Paraprofessionals are in a position to take over certain duties and responsibilities with the result that teachers are freer to plan, organize and function in innovation. (2) They may assume a role in a new program which is commensurate with their talents and experience, a role which is important in program operation. (3) Because they are intelligent individuals and are working in the same school scene they may have input and recommendations for implementation and operation of new programs.

3. It must be admitted that the use of paraprofessionals in a school building is in itself an innovation. Principals who welcome large numbers of paraprofessionals are probably the type of individuals who find it easy to entertain new ideas and approaches, and hence, new programs. Positive administrative support for paraprofessionals into innovations, the presence of paraprofessionals in substantial numbers, and the existence of more than average new programs is something other than mere coincidence and

probably reflects a general creative point of view incurrent in the total school setting, as aided and abetted by the administrator.